Original Article

Quality of life of adolescents and young people arrive at an addiction treatment centers upon their admission, and 1, 4 and 8 months after methadone maintenance therapy

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Abstract:

BACKGROUND: Drug abuse influences the quality of life significantly. Thus, the present study is designed to compare the quality of life of adolescents and young adults who have voluntarily referred to addiction treatment centers at different time slots of upon admission, and 1, 4, and 8 months after maintenance therapy.

METHODS: The present paper is a longitudinal study on 141 of adolescents and young adults who had referred to various addiction treatment centers throughout Isfahan voluntarily. The population was selected through convenience sampling method and 137 of adolescents and young adults continued the research until the end. The results were analyzed using descriptive and analytic statistics (frequency, mean, standard deviation, repeated measure test, and *post-hoc* test) in SPSS 17.

RESULTS: Results showed that the average of quality of life total score was sequential and not the same in the 4 times slots under study. The total quality of life score upon admission was significantly different from 1, 4, and 8 months after maintenance treatment. However, quality of life at 1-month was not significantly different to that at 4 and 8 months after the treatment; quality of life at 4 months after the treatment was not significantly different to that at 8 months after.

DISCUSSION: According to the present study, it can be concluded that the quality of life of adolescents and young adults referring to addiction treatment centers increases 1-month after the treatment; nevertheless, it is worth to note that the degree of quality of life increase in 4 and 8 months after the treatment is not as much as that in 1-month after the treatment.

Keywords:

Addiction treatment, adolescents, methadone maintenance therapy, quality of life

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Introduction

Adolescence years are prone to greater risk of drug abuse and addiction; thus, these years are of greater significance with regard to risky behaviors.[1] Great emotional, social, cognitive, and biological changes occur during the early years of adolescence; these changes can affect adolescents and young adults' behavior and selection. They also increase their tendency toward drug abuse.[2] The available information show that drug abuse has increased dramatically among adolescents and young adults. One way to decrease drug abuse in adolescence is controlling it during teenage years.[3]

Drug abuse is a major problem which not only impacts individuals' physical and psychological health, but also jeopardises

general safety and social performance as a result of causing disease and mortalities.[4] On the other hand, studies show that opiates, drugs, sedatives, and alcohol correlate with the low quality of life.[5]

Various studies show that therapeutic programs affect drug-dependent people positively and decrease the amount and frequency of drug consumption. Nevertheless, only a limited number of studies have thus far been conducted on the effect of therapeutic programs on quality of life.[6] World Health Organization defines the quality of life as an individual's perception of his or her own position in life with regard to cultural and value systems and in relation to goals, expectations, standards, and concerns.[7] On the other hand, quality of life is considered as a reliable measure for assessing the outcome of therapeutic methods employed for treatment of patients.[6]

As individual treatment plans such as detoxification, pharmacotherapy, and psychotherapy aim to reduce addicts' dependence on drugs, rehabilitate them to the social, individual, family, educational, and vocational life circle, and improve their quality of life, presence of certain personality traits and the low quality of life and demographic characteristics render all therapeutic efforts fruitless as "building a house on a flowing river." In other words, to spark a lasting hope requires great attention to factors threatening addicts' life. Thus, preparing any preventive program at second and third levels, continuation of the treatment program and any general policies require a great attention to the issue of quality of life and personal threatening factors in addicts.[5]

As shown by Ponizovsky and Grinshpoon, it is expected that the quality of life of addicts going through the 4th or 8th months of their treatment should be greater than that of addicts in the first stage of treatment.[8] If the opposite is witnessed, then adequate assessments should be conducted to specify the area not showing any development so that appropriate solutions can be offered to increase the quality of life and decrease the possibility of relapse.[6] Therefore, a nonimprovement of the quality of life can indicate a failed addiction treatment program. It is then necessary to increase teenagers' quality of life to decrease the possibility of a relapse into drug abuse.

According to the above, the present study aims to compare the quality of life of adolescents and young adults who have voluntarily referred to addiction treatment centers at different time periods of upon admission and 1, 4, and 8 months after maintenance treatment. The study posed the question whether there is a difference in adolescents and young adults' quality of life between the upon-admission point of time and 1, 4, and 8 months after maintenance treatment.

The author of the present paper hopes that the results of this study can be beneficial to respective authorities with regard to appropriate planning for increasing adolescents and young adults' quality of life and decreasing the possibility of their relapse into drug abuse.

Methods

The present study is a longitudinal study that was conducted in several addiction treatment centers of Isfahan (Welfare Organization, Gozari Haftoun Amin, Khorshid) where patients referred for receiving maintenance treatment. Methadone maintenance treatment (MMT) is one of the significant and key solutions that decrease the possibility of using illegal injection drugs dramatically. In this solution, methadone is used by addicts instead of the drugs they used to consume. Consumption of methadone decreases treatment symptoms significantly.[9]

The study population was comprised of adolescents and young adults referring to the above-mentioned treatment centers. The availability sampling method was used for sampling from the statistical population. All adolescents and young adults aged between 12 and 25 who had referred to the centers voluntarily and were in the 1st week of their maintenance treatment were selected for the study. To start the research, the researcher obtained written licenses from the midwifery-nursing college of Isfahan (Khorasgan) Azad University and then introduced herself to the addiction treatment centers (Welfare Organization, Gozari Haftoun Amin, Khorshid) and then obtained the necessary licenses from these centers for commencing the study. The qualified adolescents and young adults who were referring to these centers for the 1st time for addiction treatment were invited to participate in this study. The objectives of the study were explained to the adolescents and young adults, and their informed consent was obtained. They were then ensured that their data captured on questionnaires would be kept confidential. Finally, 141 adolescents and young adults aged between 18 and 25 who had voluntarily referred to these centers from July 2011 to October 2012 joined the study. 137 adolescents and young adults underwent the 8-month treatment program fully. It is worth to note that all centers followed the same treatment protocol.

The tools used in the study were demographic characteristics and short form-36 (SF36) quality of life questionnaire. The latter is one of the World Health Organization questionnaires that are used for measuring one's health and assessing one's quality of life. The

questionnaire includes 36 questions and 8 scales, each comprised of 2–10 questions assessing one's health in eight areas of physical functioning, physical health problem, pain, general health, energy and emotions, social activities, emotional health problem, and mental health. The total score of the eight scales may range between 0 and 100; 0 represents the worst and 100 represents the best state in the scale in question.

The Farsi version of SF36 questionnaire has been approved by Iranian Institute for Health Sciences Research as a standard questionnaire. Convergent validity test was employed in this institute to determine the validity of this questionnaire. The resultant correlation coefficients stood higher than the recommended value (0.4) (coefficients stood between 0.58 and 0.95). The scientific reliability of the questionnaire has also been examined in various Iranian studies through Internal consistency Reliability for which the Cronbach's alpha of 0.77–0.90 was obtained.[10]

It is worth to note that the questionnaire of demographic characteristics was filled out upon admission, but the quality of life questionnaire was filled out upon admission, 1, 4, and 8 months after the treatment. In addition, the questionnaires were filled out by nurses and psychologists who were completely clarified about the research goals and objectives. The collected data were then analyzed through descriptive and inferential statistics of SPSS software V.17(Chicago: SPSS Inc).

Results

According to the obtained results, the number of addicts referring to the addiction treatment centers was as follow: Welfare organization (57.4%), Haftoun (28.4%), Amin (12.1%), Khorshid (2.1%). The majority of addicts were men (96.5%). Furthermore, the results showed that the majority of the population (81.5%) were of prediploma educational level. The average of quality of life total score and the eight aspects in the 4 times slots after the maintenance treatment are shown in Table 1. The average of quality of life score in the beginning of

maintenance treatment in adolescents and young adults referring to the treatment centers in Isfahan stood at 44.07 ± 13.24. The average for 1, 4, and 8 months after the maintenance treatment were 53.56 ± 12.35, 54.36 ± 15.10, and 55.42 ± 17.92, respectively. A comparison of above averages with the upon-admission value had a significant difference ($P = 0.000$).

The variance analysis through iterative observations showed that the average of quality of life total score in the eight scales (physical functioning, physical health problem, pain, general health, energy and emotions, social activities, emotional health problem, and mental health) were not equal at the 4 times slots and quality of life total score had a significant increase in 1, 4, and 8 months after maintenance treatment in comparison with the upon-admission time slot. However, no significant difference was witnessed in the quality of life score in 1, 4, and 8 months after the maintenance treatment. Table 1 shows the average of quality of life total score and the eight scales in the 4 times slots after the maintenance treatment.

Discussion

As shown by the results, the average of quality of life score in the beginning of adolescents and young adult's maintenance treatment was lower than the average. In general, due to the negative effect of addiction on all aspects of quality of life, addicts' quality of life is usually of a lower quality.[11] As per Karow's study, patients' quality of life was also lower in all aspects in the beginning of treatment which is consistent with the results of the current study.[12] Černe *et al.* maintained that the quality of life is a proper criterion for assessing the effect of alcohol consumption.[11] In addition, individuals who are of a lower quality of life have a greater tendency to dependence on, and abuse of, drugs.[13] It is also worth to note that the addicts' low quality of life is an important factor causing their inability to overcome their addiction, as well as their relapse into addiction.[14] The comparison results of quality of life average upon admission and 1, 4, and 8 months after maintenance treatment in adolescents

Table 1: Mean of total quality of life score (SD) and related domains in 4 times after maintenance therapy

Time of assess Quality of life	Total quality of life score	General health	Physical functioning	Physical health problem	Pain	Emotional health problem	Social activities	Energy and emotions	Mental health
Upon their admission	44.44 (19.07)	48.23 (13.28)	57.42 (26.90)	68.070 (32.42)	50.09 (29.13)	66.66 (36.05)	42.79 (16.44)	44.41 (23.59)	44.44 (19.07)
After 1-month	53.7 (21.27)	55.5 (13.84)	73.85 (26.66)	53.53 (35.09)	40.30 (22.78)	61.72 (33.89)	44.27 (15.79)	56.72 (21.09)	53.72 (21.27)
After 4 months	52.38 (24.8)	55.3 (11.85)	66.58 (32.76)	52.11 (36.47)	37.28 (23.5)	52.46 (37.53)	43.43 (12.57)	59.85 (21.59)	52.38 (24.8)
After 8 months	55.42 (17.92)	51.69 (12.23)	69.13 (26.27)	57.90 (34.19)	37.09 (25.73)	53.08 (38.04)	48.51 (16.75)	57.10 (25.06)	59.63 (22.17)

SD=Standard deviation

and young adults referring to addiction treatment centers in Isfahan showed a significant difference. The results of the current study confirmed those obtained by Ponizovsky and Grinshpoon showing that quality of life of individuals was higher 4 months after their treatment than that in the first stage of treatment.[8] As per Oviedo-Joekes *et al*., an increase in quality of life was observed 12 months after addiction treatment.[15] Tracy studied the quality of life of women under treatment 1-week, 1 and 6 months after treatment; the obtained results showed a considerable improvement in their quality of life; however, it was still much lower than ordinary people's level of quality of life.[16]

With regard to the eight scales of quality of life, the results showed that the average of quality of life score in general health dimension was not the same in the 4 times slots and the highest score belonged to 1-month after maintenance treatment ($P = 0.004$). In addition, a paired comparison of quality of life assessment time slots showed that the quality of life in general health dimension showed a significant difference between upon admission and 1, 4, and 8 months after the treatment. However, no significant difference was observed in general health in 1, 4, and 8 months after treatment. As per the results obtained by similar studies and what was expected, general health in 1, 4, and 8 months after treatment had increased.[16] The results of the above study showed that although the quality of life has increased in general health dimension, this scale has taken a descending trend in the 8 months after maintenance treatment. It may be concluded that individuals' public health are not taken into serious consideration after they overcome addiction and their physical pains are alleviated; as a result, this scale of quality of life decreases.

The average of quality of life score in physical functioning scale was not the same in the 4 times slots ($P = 0.002$) and the highest score belonged to 1-month after maintenance treatment. In addition, a paired comparison of time slots showed that the quality of life in physical functioning scale shows a significant difference in the 4 times slots. Nevertheless, no significant difference was observed in 1, 4, and 8 months after treatment. Chou *et al*. observed no considerable change in 6 and 12 months after MMT in the physical aspect of quality of life of patients consuming heroin.[4] In Tracy's study as well, the women who were under treatment showed significant increase in their physical functioning 1–6 weeks after the maintenance treatment, but showed no significant increase 1-week to 1-month after the treatment.[16] This indicates that the quality of life improves right after therapeutic interventions, but it slows down with the same pace and intensity. This can probably be attributed to greater attention paid to the patients in the preliminary stages of treatment.

As per the obtained results, the average of quality of life score in physical health problem scale was not the same in the 4 times slots ($P = 0.026$). It was also determined that quality of life in physical health problem scale is of significant difference between upon admission and 1 and 4 months after the treatment. However, no significant difference was observed between upon admission and 8 months after treatment. Furthermore, no significant difference was observed between 1, 4, and 8 months after treatment in physical health problem scale. However, in a study conducted on the quality of life of 51 patients dependent on methadone, it was shown that there was a significant increase in the physical health problem scale 6 months after the treatment.[12] It thus seems necessary to explore the reasons for a lack of increase in this scale despite 8 months of maintenance treatment. As per the obtained results, there was a significant difference between upon admission and 1 and 4 months after the maintenance treatment. However, the difference was not significant 8 months after the treatment for which some nontherapeutic measures might be needed to be taken.

The average of quality of life score in pain scale was not the same in the 4 times slots ($P = 0.018$). The sequential test showed that there was a significant difference in pain aspect of quality of life between 1, 4, and 8 months after treatment. However, no significant difference was observed between upon admission and 8 months after treatment. As methadone is used as a pain-killer,[17] a decrease in pain is expected after receiving maintenance treatment. As shown by the results, the effect of methadone is noticeable 1-month after the treatment, but the difference of the effect diminishes and becomes insignificant 8 months after the treatment. Of course, as per the study conducted by Solhi *et al*., rosemary can be used as a complementary treatment for alleviating patients' bone pains.[18] As mentioned before, complementary treatments can be used for alleviating patients' pains and improving their quality of life. Considering the significance of decreasing pain, it is thus recommended to employ complementary treatments alongside maintenance treatment.

The obtained results showed that the average of quality of life score in emotional health problem scale was not the same in the 4 times slots ($P = 0.086$). It was also determined that quality of life in emotional health problem scale is of significant difference between upon admission and 4 and 8 months after the treatment. However, no significant difference was observed between 4 and 8 months after treatment. It can be concluded based on the results that the emotional health problem scale, in comparison with other scales, requires greater time to improve. As witnessed, there was no significance different between upon admission and 1-month after the treatment. Despite the increase in this scale, the intensity of increase was

not significant. It seems that more time is required for assessing this scale and appropriate plans should be made for improving this scale of quality of life.

The social activities scale is one of the most important aspects of addicts' quality of life. In the present study, the average of quality of life score in social activities scale was not the same in the 4 times slots ($P = 0.20$). However, two paired comparisons of time slots showed that the quality of life in social activities scale shows no significant difference between upon admission and 1, 4 and 8 months after treatment. As shown by Oviedo-Joekes *et al.*, the patients with drug abuse background are of poor social relations.[15] According to the study conducted by Tracy *et al.*, the difference in social activities scale was significant between 1 and 6 months after treatment, but insignificant between 1-week and 6 months after the treatment.[16] As per another study, there was a significant increase in the social activities scale 12 months after the maintenance treatment.[4] However, none of such increases was observed in the current paper. Due to the significance of this scale, it is thus worth to explore, in another study, the reasons of lack of increase in social activities scale, especially in this age group. Nondrug treatments can also be taken into consideration. In the study conducted by Maremmani *et al.*, patients dependent on heroin were also of poor social relations.[19] However, the lower degree of social aspect of addicts' quality of life probably indicates their greater vulnerability through the course of time.[16] Banazadeh *et al*. concluded that, considering the role of social relations, group sessions and appropriate communications with family members and therapists can be employed during the treatment process.[20] It was also shown by another study that the use of methadone for heroin-dependent addicts' treatment for alleviating their pains and addiction symptoms improves their general health and social relations.[4] Considering the previous studies conducted on this area, the researcher believes that a combination of drugs (methadone) and support groups is necessary for treating the adolescents and young adults consuming drugs.

The average of quality of life score in energy and emotions scale was not the same in the 4 times slots ($P = 0.003$). However, a paired comparison of time slots showed that quality of life in energy and emotions scale shows a significant difference between upon admission and 1, 4 and 8 months after treatment. In addition, there was no significant difference between 1, 4 and 8 months after treatment.

An increase in energy and emotions after maintenance treatment is expected as a fine result of maintenance treatment. However, this trend needs to continue in the next months and be considered as a preventive factor for the recurrence of the condition.

The average of quality of life score in mental health scale was not the same in the 4 times slots after the maintenance treatment ($P = 0.000$). However, a paired comparison of time slots showed that the quality of life in mental health scale shows a significant difference between upon admission and 1, 4, and 8 months after treatment. However, there was no significant difference between 1, 4, and months after treatment. Adolescents and young adults' dependence on tobacco leads to mental disorders.[21]

Thus, it is possible that this dimension of patients' quality of life suffer in this study. In Tracy's study on the mental health scale, quality of life was significant from 1-week to 1-month and from 1-week to 6 months. However, it was not significant from 1 to 6 months.[16] In another study, the results showed that mental health improves 6 and 12 months after maintenance treatment.[4] These results confirm the ones obtained by this study. Nevertheless, it is worth to note that Nasirian *et al*. maintained that the degree of dependence on tobacco and drugs has a direct relationship with the severity of mental problems.[21]

Conclusion

According to the results obtained by the present study, it can be concluded that the quality of life of drug addicts can improve through various stages of treatment; however, it is noteworthy that this trend of quality of life improvement is of considerable pace 1-month after maintenance treatment (short-term) while the progress proves inconsiderable and insignificant 4 months after maintenance significance. It is thus necessary to take into consideration appropriate plans for long-term improvement of quality of life.

The quality of life scale that suffered most was the social activities in adolescents and young adults. No noticeable improvement was observed in this scale even after maintenance treatment. As per the obtained results, and in addition to maintenance treatment, different scales and dimensions of quality of life, particularly the social scale, social network and support should be taken into consideration as significant factors for treatment and decreasing the chance of relapse into addiction. It is recommended that the effect of social support be studied and assessed in future studies.

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Conflicts of interest

There are no conflicts of interest.

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